



U.S. Department  
of Transportation  
**Federal Aviation  
Administration**

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800 Independence Ave., S.W.  
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FEDERAL COMMUNICATIONS COMMISSION  
OFFICE OF SECRETARY

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In the Matter of

Petition for Rulemaking To Allocate  
the 5.1-5.35 GHz Band and Adopt  
Service Rules for a Shared Unlicensed  
Personal Radio Network

RM-8648

RM-8653

Comments by the Federal Aviation Administration (FAA).

**WINForum.**

The FAA does not agree that WINForum has made a case for the "requirement" for a wireless network. We are also not convinced that the 5 GHz band is the only location for such a system. If SUPERNET can coexist with radiolocation, there are several frequency bands where it could be accommodated. Furthermore, the airport environment may be just the place where such devices could proliferate, causing interference to sensitive navigation systems on the aircraft moving about on the ground or on final approach. The potential for interference with critical aeronautical safety of life navigation systems must be avoided. Placing this system in a band used for aeronautical radionavigation is therefore not acceptable.

With respect to the use of the 5 GHz, the microwave landing system (MLS) is not being phased out by the United States in favor of differential global positioning system (GPS), as alleged by WINForum in their petition. In fact, there are plans for at least 26 MLS installations and possibly many more at Category (CAT) II and CAT III runways. In addition, the U.S. Department of Defense has significant MLS installations. The merging of MLS with GPS is also not yet known.

At a recent Communications/Operations Divisional meeting, International Civil Aviation Organization (ICAO) stated that the 5000-5150 MHz band must remain exclusive for aeronautical radionavigation. In so stating, ICAO recognized that some administrations are already making plans for other Aeronautical Radionavigation System Services (ARNS) in the

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part of this band not allocated for the MLS. This is one of the few frequency bands allocated to ARNS which has spectrum available for ARNS development. This band has been identified as a candidate for the differential GPS data link mentioned by WINForum. Also, the United States has identified this band as a candidate for the automatic dependent surveillance (ADS) system.

Both of the above mentioned systems are new initiatives, and both are actively under development within the aeronautical community. ADS is a two way air-ground surveillance system which will provide other aircraft and the air traffic controller critical information on aircraft position and velocity. It will be used to guide aircraft in the air and on the ground in poor visibility weather. Its performance must be assured against any potential for harmful interference, such as is possible from SUPERNET. The portion of the band below 5150 MHz is required by the aviation community for such initiatives.

The radio spectrum is a vital national and international resource. At this point in history, it is in more demand than ever before, and therefore must be protected from abuse. Prior to the authorization of any new system requiring the use of the radio spectrum, perceived "requirements" must be substantiated. The FAA position is that this is especially important for a proposed new service requesting spectrum in a frequency band authorized for ARNS.

The WINForum proposal includes only generalized calculations, based on voice traffic, as the basis for spectrum requirements. This is tenuous at best. Statements of sharing potential are made without technical basis provided. For instance, the allegation that using spectrum above 10 GHz is not acceptable because of the high cost of the technology needed to exploit these very high frequency bands would, as a practical matter, deny the benefits of SUPERNET from those who stand the most to gain from wireless access to the National Information Infrastructure. In fact, it is just this sort of new service which should be encouraged to exploit spectrum above 10 GHz. Again, no basis for their claim is given.

While we oppose the use of the 5000-5150 MHz band for SUPERNET, we would also oppose the use of the band 5150-5250 MHz until sharing studies have been completed which show that there is a potential for sharing this band with high systems such as the airport surface detection equipment and the terminal Doppler weather radar (TDWR), both of which are part of the weather navigation safety program of the FAA.

Such sharing studies must use worst case scenarios and show that in no way can the ARNS be interfered with. In addition, the WINForum must acknowledge that they will not receive any protection from harmful interference from ARNS.

#### **NII Band**

The FAA suggests that the NII Band system be encouraged to exploit spectrum above 10 GHz, and that sharing spectrum allocated to ARNS is not acceptable due to the critical nature of the ARNS systems in providing safety of life.

Sharing of the band 5150-5250 MHz between the proposed NII Band wireless LAN and the aeronautical systems, e.g., airport surface detection equipment and TDWR, is not recommended unless a sharing study proves that the NII Band system(s) can share the band and not cause interference to ARNS under any conditions. This study must include:

1. verifiable worst case emission characteristics of the NII Band system(s), from a sharing point of view
2. verification of spectrum requirements
3. verification that no other frequency band is available, and why.

It is also understood that NII Band-type systems will not be protected from interference created by aeronautical systems.

If there are any questions, please contact Mr. Robert Frazier, Spectrum Planning and International Division, at (202) 267-9722.

*Gerald J. Markey*  
for Gerald J. Markey  
Program Director for Spectrum Policy  
and Management